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(71)Applicant : NEC CORP
(72)Inventor : CHOKAI TAKESHI
MATOBA HIROSHI
OCHIAI KATSUHIRO

(54) TELEVISION SIGNAL STORAGE/REPRODUCING DEVICEAND TELEVISION SIGNAL STORAGE/REPRODUCING SYSTEM

(57)Abstract:
PROBLEM TO BE SOLVED: To alloy a user to view a commercial message matching his or her preference by effectively utilizing the viewing time of a television program.
SOLUTION: A storage device 102 stores a television signal received by a tuner 101. A preference information table 107 stores information denoting preference of a user to commercial messageand a timing contents cross- reference table 105 stores a televising timing and contents of each commercial message. A CM selection means 108 selects a commercial message matching the preference of the user among the commercials message stored by the storage device 102 and a commercial message part in a signal outputted to a viewing device 109 is replaced with the selected commercial when the user views a television program.

CLAIMS

[Claim(s)]
[Claim 1]Television signal store-and-forward-of-switching-signal equipment comprising:
A tuner device which receives a television signal.

A storage device which accumulates a television signal which this tuner device received.
A commercial selecting means which substitutes a commercial part in a signal outputted to viewing-and-listening equipment when commercials suitable for a user's taste are chosen from commercials accumulated in this storage device and a user views and listens to a TV program by said selected commercials.

[Claim 2]The television signal store-and-forward-of-switching-signal equipment comprising according to claim 1:
A user taste information acquisition means which acquires taste information which shows taste to a user's commercials.
It has a commercial contents information acquisition means which acquires commercial contents information which shows the contents of each of each commercials accumulated in said storage deviceAnd based on taste information which said commercial selecting means acquired by said user taste information acquisition meansand commercial contents information acquired by said commercial contents information acquisition meansComposition which chooses commercials suitable for a user's taste from commercials accumulated in said storage device.

[Claim 3]Said commercial selecting means at the time of starting of television signal store-and-forward-of-switching-signal equipment. The television signal store-and-forward-of-switching-signal equipment according to claim 1 having the composition which chooses one commercials suitable for a user's taste from commercials accumulated in said storage deviceand is outputted to said viewing-and-listening equipment.
[Claim 4]When an electronic program guide screen is displayed on said viewing-and-listening equipment as for said commercial selecting meansThe television signal store-and-forward-of-switching-signal equipment according to claim 1 which chooses commercials which suited a user's taste out of commercials accumulated in said storage device one by oneand is characterized by having the composition which displays selected commercials on said some of electronic program guide screens.
[Claim 5]When a reservation-of-picture-recording screen is displayed on said viewing-and-listening equipment as for said commercial selecting meansThe television signal store-and-forward-of-switching-signal equipment according to claim 1 which chooses commercials which suited a user's taste out of commercials accumulated in said storage device one by oneand is characterized by having the composition which displays selected commercials on said some of reservation-of-picture-recording screens.
[Claim 6]When a picture recording program list screen is displayed on said viewing-and-listening equipment as for said commercial selecting meansThe television signal store-and-forward-of-switching-signal equipment according to claim 1 which chooses commercials which suited a user's taste out of commercials

accumulated in said storage device one by oneand is characterized by having the composition which displays selected commercials on said some of picture recording program list screens.

[Claim 7]When power off of television signal store-and-forward-of-switching-signal equipment is directed by user to said commercial selecting meansThe television signal store-and-forward-of-switching-signal equipment according to claim 1 having the composition which chooses one commercials suitable for a user's taste from commercials accumulated in said storage deviceand is outputted to said viewing-and-listening equipment.

[Claim 8]When viewing and listening of commercials is demanded by user of said commercial selecting meansThe television signal store-and-forward-of-switching-signal equipment according to claim 1 which chooses commercials which suited a user's taste out of commercials accumulated in said storage device one by oneand is characterized by having the composition which outputs selected commercials to said viewing-and-listening equipment.

[Claim 9]The television signal store-and-forward-of-switching-signal equipment according to claim 2wherein said commercial contents information acquisition means has the composition which acquires commercial contents information on which a television signal which said tuner device receives is overlapped.

[Claim 10]The television signal store-and-forward-of-switching-signal equipment according to claim 2wherein said commercial contents information acquisition means has the composition which acquires commercial contents information by communicating with a commercial contents information control center which has managed commercial contents information.

[Claim 11]The television signal store-and-forward-of-switching-signal equipment according to claim 2 having the composition which acquires taste information which said user taste information acquisition means displayed a taste information setting screen on said viewing-and-listening equipmentand a user set up using this taste information setting screen.

[Claim 12]The television signal store-and-forward-of-switching-signal equipment according to claim 2wherein said user taste information acquisition means has the composition which acquires taste information based on a history of a program which a user viewedlistened to which or recorded in the past.

[Claim 13]The television signal store-and-forward-of-switching-signal equipment according to claim 2wherein said user taste information acquisition means has the composition which acquires taste information based on a reproduction ratio for every program and the contents of each program which are accumulated in said storage device.

[Claim 14]The television signal store-and-forward-of-switching-signal equipment according to claim 2wherein said user taste information acquisition means acquires taste information based on the contents of commercials which were not fast forwarded at the time of reproduction.

[Claim 15]A tuner device which receives a television signaland a storage device which accumulates a television signal which this tuner device receivedA user taste

information acquisition means which acquires taste information which shows taste to a user's commercialsA commercial contents information acquisition means which acquires commercial contents information which shows the contents of each of each commercials accumulated in said storage deviceA commercial reproduction genre information acquisition means which acquires commercial reproduction genre information which shows a genre of a program which also displays commercials simultaneouslyBased on taste information acquired by said user taste information acquisition means according to a user's directionsand commercial contents information acquired by said commercial contents information acquisition meansCommercials suitable for a user's taste are chosen from commercials accumulated in said storage deviceProcessing which substitutes a commercial part in a signal outputted to viewing-and-listening equipment when a user views and listens to a TV program by said selected commercialsOr when a program of a genre acquired by said commercial reproduction genre information acquisition means accumulated in said storage device is outputted to said viewing-and-listening equipmentTelevision signal store-and-forward-of-switching-signal equipment which chooses commercials which suited a user's taste out of commercials accumulated in said storage device one by oneand is characterized by having CM selecting means which performs processing which displays simultaneously an image of this chosen commercialsand an image of said program on said viewing-and-listening equipment.

[Claim 16]Said commercial reproduction genre information acquisition meansThe television signal store-and-forward-of-switching-signal equipment according to claim 15 having the composition which acquires a genre which displayed a genre setting screen on said viewing-and-listening equipmentand as which a user specified it using said genre setting screen as commercial reproduction genre information.

[Claim 17]Said commercial reproduction genre information acquisition meansAt the time of reproduction of a program accumulated in said storage devicea rate of commercials of having been fast forwarded of the commercials in the program is searched forThe television signal store-and-forward-of-switching-signal equipment according to claim 15 having the composition for which the rate acquires a genre of a program beyond a specified value as commercial reproduction genre information.

[Claim 18]The television signal store-and-forward-of-switching-signal equipment comprising according to claim 1:

An additional information table where additional information about commercials is stored.

An additional information related processing means to display an additional information screen based on additional information relevant to commercials under present output accumulated in said additional information table on said viewing-and-listening equipment when commercials are outputted to said viewing-and-listening equipment and presenting of additional information is demanded by user.

[Claim 19]Said additional information the request-for-information point including shown request-for-information point information said additional information related processing meansWhen an additional information screen is displayed on said viewing-and-listening equipment and request for information is demanded by userThe television signal store-and-forward-of-switching-signal equipment according to claim 18 having the composition which performs request for information via a communication line to the request-for-information point shown using request-for-information point information in additional information relevant to said additional information screen.
[Claim 20]Said additional information merchandise purchase screen information and the merchandise purchase point for displaying a merchandise purchase screen including shown merchandise purchase point information said additional information related processing meansWhen an additional information screen is displayed on said viewing-and-listening equipment and merchandise purchase is demanded by userWhen a merchandise purchase screen is displayed on said viewing-and-listening equipment according to merchandise purchase screen information relevant to said additional information screen and a user inputs necessary information into this merchandise purchase screenThe television signal store-and-forward-of-switching-signal equipment according to claim 18 having the composition which transmits said necessary information to the merchandise purchase point shown using merchandise purchase point information relevant to said merchandise purchase screen via a communication line.
[Claim 21]A television signal store-and-forward-of-switching-signal system which comprises a commercial information distribution center characterized by comprising the followingand two or more user side equipment connected to this commercial information distribution center.
A tuner device with which said each user side equipment receives a television signal.
A storage device which accumulates a television signal which this tuner device received.
A history reporting means which receives televising timing information of commercials which a history of a program which a user viewedlistened to which or recorded in the past to said commercial information distribution center was notifiedand suited a user's taste sent from said commercial information distribution center.
Televising timing information of commercials suitable for taste of a user who received by this history reporting meansBased on a correspondence relation of time and a storage address which accumulated a television signal in said storage deviceCommercials suitable for a user's taste are chosen from commercials accumulated in said storage deviceIt has a commercial selecting means which substitutes a commercial part in a signal outputted to viewing-and-listening equipment when a user views and listens to a TV program by said selected commercialsComposition which said commercial information distribution center searches for televising timing information of commercials which suits taste of a

user of said user side equipment based on a history notified from user side equipmentand transmits this ****** televising timing information to user side equipment of said notice origin of a history.

[Claim 22]Composition in which said tuner device receives analog terrestrial broadcastingcomposition which receives digital terrestrial broadcastingComposition which receives analog cable television broadcastingcomposition which receives digital cable television broadcastingThe television signal store-and-forward-of-switching-signal equipment according to claim 1 or 15 having composition which receives analog satellite broadcastingcomposition which receives digital satellite broadcastingor the composition which receives Internet broadcasting.
[Claim 23]The television signal store-and-forward-of-switching-signal equipment according to claim 1 or 15wherein said storage device is a hard disk drive or digital video disc equipment.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]This invention relates to the technology which enabled it to view and listen to the commercials which suited taste using effectively the time when the user is viewing and listening to a TV program especially about the technology which accumulates a television signal and is reproduced.
[0002]
[Description of the Prior Art]In commercial television broadcastingcommercials are broadcast besides the usual program and the televiewer is provided with the information on various goodsetc. Howeversince a televiewer is not told when the commercials of what kind of contents are broadcast [commercials] unlike the usual programIt may be unable to view and listen to the commercials suitable for the taste of televiewerssuch as commercials of interested goodsand commercials on which favorite talent is appearingeasily. Even if the broadcast times of commercials are knownon account of work etc.he may be unable to watch television at the time.
[0003]Thenin order that a user can view and listen to the commercials suitable for tasteOnly the commercials of the attribute specified by the user are extracted and accumulated out of the received television signalWhen reproduction instruction occurs from a user laterthe technology of reproducing the accumulated commercials is proposed from the former (for exampleJPH9-214875A).
[0004]
[Problem to be solved by the invention]If the attribute of commercials which suits to an own taste according to the Prior art mentioned above is specifiedit can view and listen to the commercials which collected later and suited taste. Howeverthe time for viewing and listening to commercials must be specially made from the

Prior art mentioned aboveand it is not practical.
[0005]Thenthe purpose of this invention is to enable it to view and listen to the commercials which used effectively the time which is viewing and listening to a TV programand suited tasteeven if it does not make time for a user to look at commercials specially.
[0006]
[Means for solving problem]The television signal store-and-forward-of-switching-signal equipment of this invention is provided with the following.
A tuner device which receives a television signal in order to attain the above-mentioned purpose.
A storage device which accumulates the television signal which this tuner device received.
The commercial selecting means which substitutes the commercial part in the signal outputted to viewing-and-listening equipment when the commercials suitable for the user's taste are chosen from the commercials accumulated in this storage device and a user views and listens to a TV program by said selected commercials.

[0007]In this compositiona tuner device receives a television signal and is accumulated in a storage device. A commercial selecting means chooses the commercials suitable for the user's taste from the commercials accumulated in the storage deviceand substitutes the commercial part in the signal outputted to viewing-and-listening equipment by the commercials which chose [above-mentioned]. Thereforeaccording to this compositionit becomes possible to view and listen to the commercials which used effectively the time which is viewing and listening to a TV programand suited taste. Since it can view and listen only to the commercials suitable for tasteviewing and listening of commercialssuch as commercials which have an adverse effect on a childnot to view and listen can be prevented.
[0008]Television signal store-and-forward-of-switching-signal equipment of this inventionIn order to increase a viewing-and-listening opportunity of commercials suitable for tastesaid commercial selecting meansComposition which chooses one commercials suitable for a user's taste from commercials accumulated in said storage device at the time of starting of television signal store-and-forward-of-switching-signal equipmentand is outputted to said viewing-and-listening equipmentComposition which displays commercials which chose commercials suitable for a user's taste one by oneand chose them from commercials accumulated in said storage device when an electronic program guide screen was displayed on said viewing-and-listening equipment on said some of electronic program guide screensComposition which displays commercials which chose commercials suitable for a user's taste one by oneand chose them from commercials accumulated in said storage device when a reservation-of-picture-recording screen was displayed on said viewing-and-listening equipment on said some of reservation-of-picture-recording screensWhen a picture recording

program list screen is displayed on said viewing-and-listening equipment and power off is directed by composition and a user who display commercials which chose commercials suitable for a user's taste one by oneand chose them from commercials accumulated in said storage device on said some of picture recording program list screenscomposition which chooses one commercials suitable for a user's taste from commercials accumulated in said storage deviceand is outputted to said viewing-and-listening equipment -- orWhen viewing and listening of commercials is demanded by userit has the composition which outputs commercials which chose commercials suitable for a user one by oneand chose them from commercials accumulated in said storage device to said viewing-and-listening equipment.

[0009]When the electronic program guide screen is displayed on viewing-and-listening equipment at the time of starting of television signal store-and-forward-of-switching-signal equipment according to this compositionWhen the reservation-of-picture-recording screen is displayed on viewing-and-listening equipmentthe picture recording program list screen is displayed on viewing-and-listening equipment and power off is directed by the useror also when viewing and listening of commercials is demanded by the userit becomes possible to view and listen to the commercials suitable for taste.

[0010]The television signal store-and-forward-of-switching-signal equipment of this inventionWhen the program of the genre with a high tendency for commercials to be fast forwarded is reproducedin order to be able to display simultaneously the image of commercials suitable for the image of the above-mentioned programand the user's tasteA tuner device which receives a television signaland a storage device which accumulates the television signal which this tuner device receivedThe user taste information acquisition means which acquires the taste information which shows the taste to a user's commercialsThe commercial contents information acquisition means which acquires the commercial contents information which shows the contents of each of each commercials accumulated in said storage deviceThe commercial reproduction genre information acquisition means which acquires the commercial reproduction genre information which shows the genre of the program which also displays commercials simultaneouslyBased on the taste information acquired by said user taste information acquisition means according to a user's directionsand the commercial contents information acquired by said commercial contents information acquisition meansThe processing which substitutes the commercial part in the signal outputted to viewing-and-listening equipment when the commercials suitable for the user's taste are chosen from the commercials accumulated in said storage device and a user views and listens to a TV program by said selected commercials. Or when the program of the genre acquired by said commercial reproduction genre information acquisition means accumulated in said storage device is outputted to said viewing-and-listening equipmentThe commercials which suited the user's taste out of the commercials accumulated in said storage device were chosen one by oneand it has CM selecting means which performs processing which displays simultaneously the

image of the this chosen commercialsand the image of said program on said viewing-and-listening equipment.
[0011]In this compositiona commercial reproduction genre information acquisition means a genre setting screen displayed on viewing-and-listening equipment An input from said viewing-and-listening equipmentBased on a rate that commercials were fast forwarded in the program at the time of reproduction of a programWhen a program of a genre which acquires commercial reproduction genre informationby which a commercial selecting means is accumulated in a storage device and which was acquired by a commercial reproduction genre information acquisition means is outputted to viewing-and-listening equipmentCommercials suitable for a user's taste are chosen one by one from commercials accumulated in a storage deviceand an image of the above-mentioned program is simultaneously outputted for an image of selected commercials to viewing-and-listening equipment.
[0012]Television signal store-and-forward-of-switching-signal equipment of this invention is provided with the following.
An additional information table where additional information about commercials is stored in order to be able to use additional information about commercials.
An additional information related processing means to display an additional information screen based on additional information relevant to commercials under present output accumulated in said additional information table on said viewing-and-listening equipment when commercials are outputted to said viewing-and-listening equipment and presenting of additional information is demanded by user.

[0013]In this compositionif presenting of additional information is directed by useran additional information displaying means will display an additional information screen on viewing-and-listening equipment based on additional information relevant to commercials under present reproduction.
[0014]The television signal store-and-forward-of-switching-signal equipment of this inventionIn order to be able to charge the data about the commercials under viewing and listeningsaid additional informationThe request-for-information point including the shown request-for-information point information said additional information related processing meansWhen the additional information screen is displayed on said viewing-and-listening equipment and request for information is demanded by the userit has the composition which performs request for information via a communication line to the request-for-information point shown using the request-for-information point information in the additional information relevant to said additional information screen.
[0015]In this compositionwhen request for information is directed by the useran additional information related processing means performs request for information via a communication line to the request-for-information point shown using the request-for-information point information in the additional information relevant to the additional information screen displayed now.
[0016]The television signal store-and-forward-of-switching-signal equipment of this inventionIn order to be able to purchase easily the goods currently introduced

by commercialssaid additional informationThe merchandise purchase screen information and the merchandise purchase point for displaying a merchandise purchase screen including the shown merchandise purchase point information said additional information related processing meansWhen the additional information screen is displayed on said viewing-and-listening equipment and merchandise purchase is demanded by the userWhen a merchandise purchase screen is displayed on said viewing-and-listening equipment according to the merchandise purchase screen information relevant to said additional information screen and a user inputs necessary information into this merchandise purchase screenIt has the composition which transmits said necessary information to the merchandise purchase point shown using the merchandise purchase point information relevant to said merchandise purchase screen via a communication line.

[0017]When merchandise purchase is directed by userin this composition an additional information related processing meansIf a merchandise purchase screen is displayed according to merchandise purchase screen information relevant to an additional information screen displayed now and a user writes down necessary information in this merchandise purchase screenthe above-mentioned necessary information will be transmitted to the merchandise purchase point shown using merchandise purchase point information relevant to the above-mentioned merchandise purchase screen via a communication line.

[0018]A television signal store-and-forward-of-switching-signal system of this inventionIn order to be able to view and listen to commercials where whose taste a user used effectively time which is viewing and listening to a TV programand suitedwithout complicating composition of user side equipmentIt is a television signal store-and-forward-of-switching-signal system which comprises a commercial information distribution center and two or more user side equipment connected to this commercial information distribution centerA tuner device with which said each user side equipment receives a television signalNotify a history of a storage device which accumulates a television signal which this tuner device receivedand a program which a user viewedlistened to which or recorded in the past to said commercial information distribution centerand. A history reporting means which receives televising timing information of commercials suitable for a user's taste sent from said commercial information distribution centerTelevising timing information of commercials suitable for taste of a user who received by this history reporting meansBased on a correspondence relation of time and a storage address which accumulated a television signal in said storage devicecommercials suitable for a user's taste are chosen from commercials accumulated in said storage deviceIt has a commercial selecting means which substitutes a commercial part in a signal outputted to viewing-and-listening equipment when a user views and listens to a TV program by said selected commercialsSaid commercial information distribution center searches for televising timing information of commercials which suits taste of a user of said user side equipment based on a history notified from user side equipmentand has the composition which transmits this ****** televising timing information to user side equipment of

notice origin of said history.
[0019]If a history reporting means in user side equipment notifies a history of a program which a user viewedlistened to which or recorded in the past to a commercial information distribution center in this compositionIn a commercial information distribution centerit asks for televising timing of commercials which suited a user's taste based on the noticeand it is returned to user side equipment of a transmitting agency. Televising timing information of commercials which suited taste of a commercial selecting means in user side equipment sent from a commercial information distribution centerBased on a correspondence relation of time and a storage address which accumulated a television signal in a storage deviceCommercials suitable for a user's taste are chosen from commercials accumulated in a storage deviceand a commercial part in a signal outputted to viewing-and-listening equipment is substituted by said selected commercials.
[0020]
[Mode for carrying out the invention]Nextan embodiment of the invention is described in detail with reference to Drawings.
[0021]Drawing 1 is a block diagram of a 1st embodiment of this invention. When commercials which do not suit taste of this embodiment of a user in a TV program to which a user is viewing and listening existSubstitute the commercials by commercials suitable for a user's tastemake a user view and listenand The tuner device 101The storage device 102the time address-mapping table 103and the CM (commercials) televising timing CM contents information acquisition means 104It was provided in the contents correspondence table 105 of timingthe user taste information acquisition means 106the taste information table 107the CM selecting means 108the viewing-and-listening equipment 109and a front panel partand has the user's operation parts 110such as a manual operation button and a remote controller.
[0022]The tuner device 101 receives a television signal and has a function which outputs it to the storage device 102 in the form of a digital signal. Herebroadcast voice of a television signal which the tuner device 101 receives may be any of analog terrestrial broadcastingdigital ground broadcastinganalog cable television broadcastingdigital cable television broadcastinganalog satellite broadcastingdigital satellite broadcastingand Internet broadcasting.
[0023]A function in which the storage device 102 accumulates a television signal of digital signal form outputted from the tuner device 101It has a function which carries out the random access of the accumulated informationa function which matches a channel which is broadcasting a storage start addressan accumulation ending addressand an accumulated television signal at storage start time of a television signaland the time of an accumulation end dateand is registered into the time address-mapping table 103etc. The storage device 102 which has such a function is realizable using a hard disk drivedigital video disc equipmentetc.
[0024]Drawing 2 is a figure showing an example of contents of the time address-mapping table 103. An example shown in the figure accumulates a program and commercials which were broadcast by the time TS1-TE1 by the channel CHx in

the addresses AS1-AE1 of the storage device 102Having accumulated a program broadcast by the time TS2-TE2 by the channel CHy and commercials in the addresses AS2-AE2 of the storage device 102 is shown.
[0025]The CM televising timing CM contents information acquisition means 104 acquires commercial contents information which shows commercial televising timing information which shows televising timing of each commercials broadcastand the contentsand has a function registered into the contents correspondence table 105 of timing. Herethe time of a televising opening day of commercialsthe length of commercialsand a televising channel of commercials are included in commercial televising timing information. A keyword about goods etc. which the commercials are introducingtalent's name which is appearingetc. are contained in commercial contents information.
[0026]Drawing 3 is a figure showing an example of contents of the contents correspondence table 105 of timing. Commercials for length L 1 second by which an example of the figure is broadcast from time Ta by the channel CHxThe keyword 1 and -- showing the contentsand the keyword nrespectively at a "personal computer"--N company.It is shown that performance talent is "OOO" andas for commercials for length L 2 seconds broadcast from time Ti by the channel CHyit is shown the keyword 1--that the keywords n are a "sports car"--T companyand performance talent is "xxx."
[0027]The CM televising timing CM contents information acquisition means 104 can adopt the following two methodsfor example as a concrete method of acquiring CM televising timing information and CM contents information.
[0028]The 1st method makes CM televising timing information and CM contents information superimpose on a television signal outputted from a broadcasting stationIt is the method of extracting CM televising timing information and CM contents information which are superimposed on the CM televising timing CM contents information acquisition means 104 by television signal according to directions from a user.
[0029]The 2nd method is a method of installing a control center which manages CM televising timing information and CM contents informationand acquiring CM televising timing information and CM contents information from there. When there are directions from a userthe CM televising timing CM contents information acquisition means 104 connects self and a control center using a telephone number and an E-mail address of a control centerandmore specificallyrequires CM televising timing information and CM contents information from a control center. And a control center which received this demand is the method of transmitting CM televising timing information and CM contents information to the CM televising timing CM contents information acquisition means 104 of a requiring agency.
[0030]The user taste information acquisition means 106 acquires taste information which shows taste to a user's commercialsand has a function registered into the taste information table 107.
[0031]As a concrete way the user taste information acquisition means 106 acquires taste informationthe following four methods are employablefor example.

[0032]The 1st method is the method of using a taste information setting screen as shown in drawing 4. If a user performs display instruction of a taste information setting screen using the user's operation part 110the user taste information acquisition means 106 will display a taste information setting screen as shown in the viewing-and-listening equipment 109 at drawing 4. If a taste information setting screen is displayeda user will input the keyword to the commercials which suit taste at the keyword input column 41 using the user's operation part 110and he will input favorite talent's name into a talent name input column. The user taste information means 106 stores in the taste information table 107 the name inputted into the keyword and the talent name input column 42 which were inputted into the keyword input column 41if a user performs input completion operation. Although the user itself inputted the keyword and the name into the keyword input column 41 and the talent name input column 42the list of a keyword or talent names is displayed and it may be made to make a keyword and a talent name choose from the inside in the example of drawing 4.

[0033]The 2nd method is a way the user acquired taste information based on the history of the program viewedlistened to which or recorded in the past. When realizing this methodthe keywords (for examplebaseballa dramaa travela personal computeretc.) which show the genre and the contents (the information which shows a performer is also included) of the program are superimposed on the television signal outputted from a broadcasting station. The user taste information acquisition means 106 will acquire the keyword which shows the genre and the contents of the program from a television signalif a user recordsor views and listens to a TV program. And when the counter corresponding to the acquired keyword is already formedthe value of the counter is carried out +1when not providedthe counter to the acquired keyword is newly formed and the counted value is set as "1." If a fixed time deed and fixed time pass over such processingthe user taste information setting-out means 106A number with much counted value of counters decided beforehand are chosen from the counters corresponding to each keywordand it registers with the taste information table 107 by making the keyword corresponding to the selected counter into taste information.

[0034]The 3rd method is the method of acquiring taste information based on the keyword showing the genre and the contents of the reproduction ratio of each program accumulated in the storage device 102and each program. In realizing this methodit superimposes the keyword which shows the genre and the contents of the program on the television signal outputted from a broadcasting station. The user taste information acquisition means 106 holds the storage start addressthe accumulation ending addressand the keywordwhen a program is recorded on the storage device 102. Such information is held for each [which was recorded] program of every. And when the program accumulated in the storage device 102 is reproduced. It investigates what the % was seen by the userand when the user looks beyond in the rate decided beforehandit registers with the taste information table 107 by making the keyword corresponding to the above-mentioned program

currently held into taste information. Hereit is computable whether what% of programs were watched by the user by searching for the rate reproducedfor example without being fast forwarded between a storage start address and an accumulation ending address.

[0035]The 4th method is the method of acquiring taste information based on the keyword which shows the contents of the commercials reproduced without being fast forwarded at the time of reproduction. The keyword of the commercials reproduced without being fast forwardedIt can ask from the address with which the contents of the contents correspondence table 105 of timingthe contents of the time address-mapping table 103and the storage device 102 performed reproduction motionThe user taste information acquisition means 106 is registered into the taste information table 107 by making into taste information the keyword for which it asked based on each above-mentioned information.

[0036]The CM selecting means 108 has a function etc. which substitute the commercial part in the signal outputted to the viewing-and-listening equipment 109 by the commercials suitable for the user's taste of the commercials accumulated in the storage device 102.

[0037]The flow chart showing the example of processing of the CM selecting means 108 when drawing 5 is viewing and listening to the TV program by which the user is broadcastDrawing 6 is a flow chart showing the example of processing of the CM selecting means 108 when the user is viewing and listening to the TV program accumulated in the storage device 102and explains operation of this embodiment with reference to each figure below.

[0038]Firstoperation at the time of accumulation of a television signal is explained. When a storage start of a TV program is directedthe storage device 102A television signal which the tuner device 101 received is accumulated in the form of a digital signaland a channel which is broadcasting storage start timea storage start addressand a program to accumulate is registered into the time address-mapping table 103. Thenwhen an end of accumulation of a TV program is directedthe storage device 102Accumulation operation of a television signal is ended and it is the time address-mapping table 103. An accumulation ending address is registered into the same entry as an entry which registered the inner above-mentioned storage start timea storage start addressand a channel at the time of an accumulation end date.

[0039]Nextoperation at the time of viewing and listening of a TV program currently broadcast is explained.

[0040]When viewing and listening of a TV program currently broadcast is directedit is directed that the CM selecting means 108 chooses first a television signal currently outputted from the tuner device 101 to selecting means 108 a provided in the inside (drawing 5S1). Therebyselecting means 108 a outputs a television signal outputted from the tuner device 102 to the viewing-and-listening equipment 109.

[0041]Nextthe CM selecting means 108 searches the contents correspondence table 105 of timing based on a present date and a channel to which it is viewing

and listening nowand acquires CM televising timing information of commercials first broadcast after a TV program viewing-and-listening startand CM contents information (S2). That isout of each entry of the contents correspondence table 105 of timing. Information which shows a channel stored discovers an entry which shows a channel under present viewing and listeningWhen the time of a televising opening day stored (howeveronly time of the future is targeted rather than current time) discovers an entry nearest to a present date out of a discovered entryCM televising timing information of commercials broadcast first and CM contents information are acquired.

[0042]Thenit is judged whether based on information acquired by S2and taste information registered into the taste information table 107commercials broadcast first suit taste of the CM selecting means 108 of a user (S3). A class word of a keyword registered into the taste information table 107 makes this judgment based on whether it exists in a keyword in information acquired by S2and a talent namefor example.

[0043]And when it is judged that the commercials broadcast first do not suit a user's taste (S3 is NO)The contents correspondence table 105 of timing is searchedand one entry (the class word of the keyword registered into the taste information table 107 is registered as CM contents informationand it is an entry) in which the information about the commercials suitable for a user's taste is stored is chosen (S4). The head entry of the contents correspondence table 105 of timing is made into a search starting position at the time of the first searchand it makes the next entry of the entry which acquired the target information at the time of the last search a search starting position at the time of search of the 2nd henceforth. When it searches to the last entry of the contents correspondence table 105 of timingsearch is again performed from a head entry.

[0044]Thenthe CM selecting means 108 judges whether the commercials suitable for a user's taste shown using the information in the entry selected by S4 are accumulated in the storage device 102 (S5). This judgment is made based on CM televising timing information in the entry selected by S4and the information stored in the time address-mapping table 103. Namelyare in agreement with the televising channel of the commercials which the televising channel stored in each entry of the time address-mapping table 103 chose by S4And it is judged whether what is storage start time and the time of the order at the time of the televising opening day of the commercials which the time of an accumulation end date chose by S4 exists.

[0045]And when it is judged that it is not accumulated in the storage device 102 (S5 is NO)it returns to processing of S4. On the other handwhen it is judged that it is accumulated (S5 is YES)the length of commercials suitable for a user's taste selected by S4 judges whether it is in agreement with the length of the commercials actually broadcast (S6).

[0046]And S7 is processed when it is judged that it returns to processing of S4 and is in agreement with it when it is judged that it is not in agreement (S6 is NO) (S6 is YES).

[0047]In S7the decision result of S6 computes and holds the storage start address As in the storage device 102 of the commercials (the commercials which do not suit a user's tasteand commercials to substitute) used as YESand the accumulation ending address Ae. The storage start address As and the accumulation ending address Ae are computed based on the time of the televising opening day of the above-mentioned commercialsand the information stored in the time address-mapping table 103. Supposing the time of the televising opening day of commercials when the contents of the nowfor exampletimeaddress-mapping table 103 show drawing 2 onand the decision result of S6 was set to YES is T2 (TS2<T2<TE2)By performing the following processingsthe storage start address As and the accumulation ending address Ae are computable. Firstthe time of the storage start time and the accumulation end date which are accumulated discovers the entry which has come before and after T2 at the time of a televising opening day out of the entry of the time address-mapping table 103. In the case of this examplethe 2nd entry of the time address-mapping table 103 shown in drawing 2 is discovered. And if the entry suitable for conditions is discoveredbased on the information stored in the entryit will calculate to the following formula (1) and (2)and it will be asked for the storage start address As and the accumulation ending address Ae. In a formula (2)La is a value decided by the length of commercials.

[0048]

$$As=AS2+(AE2-AS2)-(T2-TS2)/(TE2-TS2) \quad -- (1)$$

$$Ae=As+La \quad -- (2)$$

[0049]Thenit waits for the CM selecting means 108 to become the televising time of the commercials suitable for the user's tasteand the commercials substituted (S8). And when it becomes the televising time of commercials (S8 is YES)the CM selecting means 108Direct to reproduce from the storage start address computed by S7 to an accumulation ending address to the storage device 102and. Only while the regenerative signal is outputted from the storage device 102 to selecting means 108 a provided in the insideit directs to choose the output of the storage device 102 (S9). The commercials which do not suit by this the user's taste currently broadcast are substituted for the commercials suitable for the user's taste accumulated in the storage device 102. Selecting means 108 a will choose the output signal of the tuner 101 againif a regenerative signal is no longer outputted from the storage device 102.

[0050]After processing of S9 ends the CM selecting means 108the contents correspondence table 105 of timing is searchedand the order of televising acquires information on the following commercials (S10). S10 is processed also when a decision result of S3 is set to YES. Thenit is judged whether commercials whose order of televising is the next suit taste of the CM selecting means 108 of a user (S3). Henceforththe CM selecting means 108 performs same processing with having mentioned above. Although it asked for the storage start address As and the accumulation ending address Ae of commercials substituted by performing an

operation shown in the formula (1) and (2) in explanation mentioned aboveThis method can be appliedonly when storing data in the storage device 102 and giving proportionality at length and time of data to accumulateIt cannot applywhen data is stored in form with a case so that length and time of data may not have proportionality like MPEG 2. When data is stored by MPEG 2 etc.instead of the time address-mapping table 103 shown in drawing 1What is necessary is to match with each address of the storage device 102to provide a table which registered televising time and a televising channel of data stored in that addressand just to ask for the storage start address As and the accumulation ending address Ae of commercials substituted using this table.

[0051]Nextoperation at the time of viewing and listening of a TV program accumulated in the storage device 102 is explained.

[0052]The storage device 102 will reproduce a TV program accumulated according to the directionsif reproduction of a TV program is directed. The CM selecting means 108 directs to choose an output of the storage device 102 to internal selecting means 108 aif reproduction of a TV program is directed (drawing 6S11). Therebyselecting means 108 a outputs a regenerative signal outputted from the storage device 102 to the viewing-and-listening equipment 109and makes it view and listen to a TV program accumulated in a user.

[0053]Nextthe CM selecting means 108 acquires the present reproduction address in the storage device 102 (S12)Based on it and the contents of the time address-mapping table 103time (accumulation time T) which accumulated the present reproduction portions is computedand information which shows a channel which was broadcasting the present reproduction portions is acquired (S13). The accumulation time T is computable by the contents of the nowfor exampletimeaddress-mapping table 103 showing drawing 2and performing the following processingssupposing the present reproduction address is A1 (AS1<A1<AE1)and. Information which shows a channel which was broadcasting the present reproduction portions is acquirable. Firstthe time address-mapping table 103 A storage start address stored in the entry and an accumulation ending address discover an entry which has come before and behind the present reproduction address A1 out of each inner entry. In the case of this examplethe 1st entry of the time address-mapping table 103 shown in drawing 2 is discovered. If an entry suitable for conditions is discoveredlet the CM selecting means 108 be the information which shows a channel which was broadcasting the present reproduction portions for the televising channel CHx stored in a discovered entry. The CM selecting means 108 performs an operation shown in a following formula (3) using information stored in a discovered entryand computes the accumulation time T of the present reproduction portions.

[0054]

$$T=TS1+(TE1-TS1)-(A1-AS1)/(AE1-AS1) \quad -- (3)$$

[0055]Subsequentlythe CM selecting means 108 acquires the information about the commercials first reproduced after a reproduction start from the contents

correspondence table 105 of timing (S14). That isout of each entry of the contents correspondence table 105 of timing. The information about the commercials reproduced first is acquired by discovering the entry nearest to the accumulation time T which the time of the televising opening day stored (howeveronly time of the future is targeted rather than the accumulation time computed by S13) computed by S13. In S14the storage start address of the commercials reproduced first and an accumulation ending address are also computed.

[0056]Thenbased on the contents of the taste information table 107and CM contents information of the commercials reproduced by the beginning acquired by S14it is judged whether the commercials reproduced first suit the taste of the CM selecting means 108 of the user (S15).

[0057]And when it is judged that a user's taste is not suited (S15 is NO)one entry in which the information about the commercials which suit a user's taste from the contents correspondence table 105 of timing is stored is searched (S16).

[0058]Thenit is judged whether commercials shown using information stored in an entry searched with S16 are accumulated in the storage device 102 (S17). And when it is judged that it is not stored (S17 is NO)it changes into the next entry of an entry which discovered a search starting position at the time of the last searchand S16 is processed again. On the other handS18 is processed when it is judged that it is stored (S17 is YES).

[0059]In S18a storage start address of commercials which do not suit a user's tasteand commercials (commercials from which a decision result of S17 was set to YES) to substituteand an accumulation ending address are computed.

[0060]Thenthe CM selecting means 108 waits for a reproduction address in the storage device 102 to turn into a start address of commercials substituted (S19). This reproduction start address is called for by S14 or S21.

[0061]And when it judges that it became a start address of commercials substitutedthe CM selecting means 108It directs to perform reproduction from the next address of a final address of commercials which reproduce from a storage start address computed by S18 to an accumulation ending address to the storage device 102and are substituted after that (S20). Therebycommercials which do not suit a user's taste are substituted for commercials suitable for a user's taste.

[0062]Thenreproduction orders acquire the information about the following commercials from the contents correspondence table 105 of timingand the CM selecting means 108 computes the storage start address of the above-mentioned commercialsand an accumulation ending address (S21). Also when the decision result of S15 is set to YESthe CM selecting means 108 processes S21.

[0063]An end of processing of S21 will judge whether the commercials whose reproduction orders are the next suit the taste of the CM selecting means 108 of a user (S15). Henceforthwith having mentioned abovethe CM selecting means 108 repeats the same processingand performs it.

[0064]As explained abovewhen the commercials which do not suit a user's taste exist in the TV program to which the user is viewing and listening according to this embodimentIt becomes possible to substitute the commercials for the

commercials suitable for a user's tasteand even if it does not make time for a user to view and listen to commercials speciallyit becomes possible to view and listen to the commercials suitable for taste.
[0065]Nexta 2nd embodiment of this invention is described. This embodiment not only substitutes the commercials which do not suit a user's taste for the commercials suitable for a user's tastebutIt is made to increase the viewing-and-listening opportunity of the commercials suitable for taste by outputting the commercials which suited the user's taste at the time of a reservation-of-picture-recording screen displayetc. at the time of an electronic program guide (EPG) screen display at the time of an end at the time of starting.
[0066]Drawing 7 is a block diagram of a 2nd embodiment of this invention. The point of difference between this embodiment and a 1st embodiment shown in drawing 1The point that CM reproduction genre information acquisition means 211CM reproduction genre table 212the operational mode setting-out means 213and the mode table 214 of operation are addedThey are the point provided with the storage device 202 instead of the storage device 102the point provided with the time address-mapping table 203 instead of the time address-mapping table 103and the point provided with the CM selecting means 208 instead of the CM selecting means 108. Other drawing 1 and identical codes express identical parts.
[0067]A function in which the storage device 202 accumulates a television signal of digital signal form outputted from the tuner device 101A function which carries out the random access of the accumulated informationIt has a function which matches a channel and a genre which are broadcasting a storage start addressan accumulation ending addressand an accumulated TV program at the storage start time and the time of an accumulation end dateand is registered into the time address-mapping table 203 for every accumulated TV program. A genre of a TV program shall be acquired by extracting information which shows a genre on which a television signal is overlapped. Drawing 8 is a figure showing an example of contents of the time address-mapping table 203and has an item of a genre other than an item which the time address-mapping table 103 shown in drawing 2 has.
[0068]Information which shows whether each operational mode is validated is stored in the mode table 214 of operation. Drawing 9 is a figure showing an example of contents of the mode table 214 of operation. An example shown in this drawing 9 shows that a mode and substitution mode are effective at the time of startingand a mode and CM playback genre mode are invalid at the time of EPG screen modereservation-of-picture-recording screen modepicture recording program list screen modeand an end. A user sets up effective invalidity of these each operational mode using the operational mode setting-out means 213.
[0069]Hereeach operational mode is explained.
[0070]a. It is a mode at the time of starting. -- Operational mode which chooses one commercials suitable for a user's taste as a power up from commercials accumulated in the storage device 202and is outputted to the viewing-and-listening equipment 109.
[0071]b. EPG screen mode -- Operational mode which displays continuously

commercials suitable for a user's taste accumulated in the storage device 202 on some EPG screens when an EPG screen is displayed on the viewing-and-listening equipment 109.
[0072]c. Reservation-of-picture-recording screen mode -- Operational mode which displays continuously commercials suitable for a user's taste accumulated in the storage device 202 on some reservation-of-picture-recording screens when a reservation-of-picture-recording screen is displayed on the viewing-and-listening equipment 109.
[0073]d. Picture recording program list screen mode -- Operational mode which displays continuously commercials suitable for a user's taste accumulated in the storage device 202 on some picture recording program list screens when a picture recording program list screen is displayed on the viewing-and-listening equipment 109.
[0074]e. It is a mode at the time of an end. -- Operational mode which makes a power supply ** after choosing one commercials suitable for a user's taste from commercials accumulated in the storage device 202 and outputting to the viewing-and-listening equipment 109when power off is directed by user.
[0075]f. Substitution mode -- Operational mode which substitutes commercials which do not suit taste of a user who exists in a TV program to which a user is viewing and listening by commercials suitable for a user's taste accumulated in the storage device 202.
[0076]g. CM reproduction genre mode -- Operational mode which displays continuously commercials suitable for a user's taste accumulated in the storage device 202 on some screens while reproducing a TV program of a genre stored in CM reproduction genre table 212.
[0077]CM reproduction genre information acquisition means 211 on a part of image of the program under reproduction. The genre of the program incorporating the image of commercials suitable for the user's taste is acquiredand it has the function to store the acquired genre in CM reproduction genre table 212 as commercial reproduction genre information.
[0078]As a concrete method of acquiring the genre of the program incorporating the image of the commercials whose taste of the user CM reproduction genre information acquisition means 211 suitedthe following two methods are employablefor example.
[0079]The 1st method is a method of displaying the genre setting screen which includes the list of the genres of a program in the viewing-and-listening equipment 109and making a user specifying the genre of the program incorporating the image of commercialsas shown in drawing 10.
[0080]The 2nd method is a way search for the rate of commercials of having been fast forwarded of the commercials which exist in the program at the time of reproduction of the TV program accumulatedand the rate makes the genre of the program more than specified proportion CM reproduction genre information.
[0081]The function which substitutes the commercials whose taste of a user the CM selecting means 208 does not suit for the commercials suitable for the user's

taste accumulated in the storage device 202The function which outputs the commercials which suited the user's taste at the time of an endetc. to the viewing-and-listening equipment 109 at the time of startingThe function which includes the image of commercials suitable for the user's taste in a part of display screen at the time of a reservation-of-picture-recording screen displayetc. at the time of an EPG screen displayAt the time of viewing and listening of the TV program of the genre stored in CM reproduction genre table 212it has a function etc. which include the image of commercials suitable for the user's taste in some screens.

[0082]Nextoperation of this embodiment is explained.

[0083]If a power supply is switched on by the userthe CM selecting means 208 will investigate whether the mode is set to ON at the time of starting with reference to the mode table 214 of operation (drawing 11S31). And when not set to ON (S31 is NO)processing of a power up is ended. On the other handwhen the mode is set to ON at the time of starting (S31 is YES)One entry in which the information about the commercials suitable for a user's taste is stored is chosen from the contents correspondence table 105 of timing (S32)It is investigated whether the commercials shown using the information stored in the entry are accumulated in the storage device 202 (S33).

[0084]And when not accumulatedprocess S32 againwhen accumulatedreproduction of the above-mentioned commercials is directed to the storage device 202and it directs to output a regenerative signal from the storage device 202 to the viewing-and-listening equipment 109 to the selecting means 208a. Therebycommercials suitable for a user's taste are outputted to the viewing-and-listening equipment 109.

[0085]Thenwhen viewing and listening of a TV program currently broadcast by user is directedthe CM selecting means 208 investigates whether substitution mode is set to ON with reference to the mode table 214 of operation. And when set to ONprocessing shown in a flow chart of drawing 5 and same processing are performed.

[0086]When reproduction of a TV program accumulated by user is directedthe CM selecting means 208 investigates whether substitution mode is set to ON with reference to the mode table 214 of operation. And when set to ONprocessing shown in a flow chart of drawing 6 and same processing are performed. On the other handwhen substitution mode is come by offwith reference to the mode table 214 of operationit is investigated whether CM reproduction genre mode is set to ON. And when CM reproduction genre mode is set to ONthe CM selecting means 208 performs processing shown in a flow chart of drawing 12.

[0087]In drawing 12the CM selecting means 208 asks for the genre of the TV program which the storage device 202 is reproducing now first (S41). It can ask for this from the present reproduction address of the storage device 202and the contents of the time address-mapping table 203.

[0088]Subsequentlyit is investigated whether the CM selecting means 208 has the genre and match of a program under present reproduction in the commercial

reproduction genre information stored in the reproduction genre table 212 (S42).
[0089]And when [in which a match does not exist] it judges (S42 is NO)it points to choosing the signal outputted from the storage device 202 to selecting means 208 a (S47)and S41 is processed again after that. Thereforewhen a match does not existonly the TV program under reproduction is outputted from the viewing-and-listening equipment 109.
[0090]On the other handwhen it is judged that a match exists (S42 is YES)From the contents correspondence table 105 of timingone information about the commercials suitable for a user's taste is retrievedand it is investigated whether the commercials shown using the information are accumulated in the storage device 202 (S43S44). And when not accumulatedit changes into the next entry of the entry which searched the search starting position at the time of the last searchand S43 is processed againand S45 is processed when accumulated.
[0091]It points to the CM selecting means 208 reproducing the commercials whose taste of the user set to YES the TV program under present reproduction and the decision result of S44 suit to the playback equipment 202 in S45It points to generating the signal for displaying a screen as compounded the TV program and commercials which are outputted from the storage device 202 to synthesizing means 208 b and shown in drawing 13and directs to choose the output of synthesizing means 208 b to selecting means 208 a. Therebythe commercials which suited the TV program under reproduction and the user's taste as shown in drawing 13 are simultaneously displayed on the viewing-and-listening equipment 109.
[0092]After processing of S45 is completedthe CM selecting means 208 waits for commercials to finish (waiting to set S46 to YES)and processes S41.
[0093]Nextoperation when the display of an EPG screen is directed by the user is explained.
[0094]If a user directs the display of an EPG screen using the user's operation part 110as the CM selecting means 208 is shown in the flow chart of drawing 14with reference to the mode table 214 of operationit will be investigated whether EPG screen mode is set to ON (S51).
[0095]And when EPG screen mode is set to ONDirect to generate the signal for displaying a screen as compounded the signal for EPG screensand the signal of the commercials outputted from the storage device 202 to synthesizing means 208 b and shown in drawing 15 on the viewing-and-listening equipment 109and. It directs to choose the output of synthesizing means 208 b to selecting means 208 a (S52).
[0096]Thenthe CM selecting means 208 chooses one information about the commercials suitable for a user's taste from the contents correspondence table 105 of timingand it is judged whether the commercials shown using the information are accumulated in the storage device 202 (S53S54). And when not accumulateda search start entry is shifted and S53 is processed againand when accumulatedit is directed that the decision result of S54 reproduces the commercials used as YES to the storage device 202 (S55). Therebyas shown in drawing 15the picture by

which the commercials suitable for the user's taste were included in some EPG screens is displayed on the viewing-and-listening equipment 109. Thenthe CM selecting means 208 waits to complete commercials (S56)and processes S53 again. The above-mentioned processing is repeatedly performed until the end of an EPG screen is directed by the user (until S57 is set to YES).

[0097]Nextoperation when the display of a reservation-of-picture-recording screen is directed by the user is explained.

[0098]If a user directs a display of a reservation-of-picture-recording screen using the user's operation part 110the CM selecting means 208 will investigate whether reservation-of-picture-recording screen mode is set to ON with reference to the mode table 214 of operation (S61).

[0099]And when it is judged that reservation-of-picture-recording screen mode is set to ONA signal of commercials suitable for a user's taste outputted to synthesizing means 208 b from a signal and the storage device 202 for reservation-of-picture-recording screens is compoundedIt directs to generate a signal for displaying a screen as shown in drawing 17 on the viewing-and-listening equipment 109and directs to choose an output of synthesizing means 208 b to selecting means 208 a (S62).

[0100]Thenthe CM selecting means 208 chooses one information about commercials suitable for a user's taste from the contents correspondence table 105 of timing (S63)and it is investigated whether commercials shown using the information are accumulated in the storage device 202 (S64). And when not accumulateda search start entry is shiftedS63 is processed againand S65 is processed when accumulated.

[0101]In S65the CM selecting means 208 directs reproduction of commercials from which a decision result of S64 was set to YES to the storage device 202 (S65). Therebyas shown in drawing 17an image by which commercials suitable for a user's taste were included in some reservation-of-picture-recording screens is displayed on the viewing-and-listening equipment 109. Thenthe CM selecting means 208 waits to complete commercials (S66)and processes S63 again. The above processing is repeatedly performed until an end of a reservation-of-picture-recording screen is directed by user (until S67 is set to YES).

[0102]Nextoperation when a display of a picture recording program list screen is directed by user is explained.

[0103]If a user operates the user's operation part 110 and directs a display of a picture recording program list screenas the CM selecting means 208 is shown in a flow chart of drawing 18with reference to the mode table 214 of operationit will be investigated whether picture recording program list screen mode is set to ON (S71).

[0104]And when picture recording program list screen mode is set to ONThe signal of the commercials which the user's taste outputted from the signal and the storage device 202 for picture recording program list screens suited is compounded to the synthesizing means 208bIt directs to generate the signal for displaying a screen as shown in the viewing-and-listening equipment 109 at

drawing 19and directs to choose the output of synthesizing means 208 b to selecting means 208 a (S72).
[0105]Thenthe CM selecting means 208 chooses one information about the commercials suitable for a user's taste from the contents correspondence table 105 of timing (S73)and it is investigated whether the commercials shown using the information are accumulated in the storage device 202 (S74).
[0106]And when not accumulateda search start entry is shiftedS73 is processed againand when accumulatedthe decision result of S74 directs reproduction of the commercials used as YES to the storage device 202 (S75). Therebyas shown in drawing 19the picture by which the commercials suitable for the user's taste were included in some picture recording program list screens is displayed on the viewing-and-listening equipment 109. Thenthe CM selecting means 208 waits for commercials to finish (S76 is YES)and processes S73 again. The above processing is repeatedly performed until the end of a display of a picture recording program list screen is directed by the user (S77 is YES).
[0107]Nextoperation when power off is directed by the user is explained.
[0108]A user's directions of power off will investigate whether the mode is set to ON at the time of an end with reference to the mode table 214 of operationas the CM selecting means 208 is shown in the flow chart of drawing 20 (S81).
[0109]And when it is judged that the mode is come by off at the time of an end (S81 is NO)the power relay which omitted the graphic display is controlled and a power supply is made into ** (S87).
[0110]On the other handwhen it is judged that the mode is set to ON at the time of an end (S81 is YES)It directs to choose the output signal of the storage device 202 to selecting means 208 aand one information about the commercials suitable for a user's taste is chosen from the contents correspondence table 105 of timing (S82S83). Thenthe commercials shown using the information which chose [above-mentioned] investigate whether it is accumulated in the storage device 202 (S84).
[0111]And when not accumulateda search start entry is shifted and S83 is processed againand when accumulatedit is directed that the decision result of S84 reproduces the commercials used as YES to the storage device 202 (S85). Therebyone commercials suitable for a user's taste are outputted to the viewing-and-listening equipment 109.
[0112]Thena power supply is made into ** after waiting (S86) and commercials finish that commercials finish the CM selecting means 208 (S87).
[0113]Nextoperation when viewing and listening of a virtual CM special channel is demanded by the user is explained.
[0114]A user inputs a viewing-and-listening demand of a virtual CM special channel from the user's operation part 110 to view and listen to the virtual CM special channel which extracted and connected only the commercials suitable for an own taste out of the commercials accumulated in the storage device 202 as shown in drawing 21.
[0115]It is directed that the CM selecting means 208 will choose the regenerative signal outputted from the storage device 202 to selecting means 208 a as shown

in the flow chart of drawing 22 if a viewing-and-listening demand of a virtual CM special channel is inputted (S91).
[0116]Thenthe CM selecting means 208 retrieves one information about commercials which suited a user's taste from the contents correspondence table 105 of timing (S92)and commercials shown using retrieved information investigate whether it is accumulated in the storage device 202 (S93).
[0117]And when not accumulated (S93 is NO)search is started from the next entry of the last search end positionand one information about commercials suitable for a user's taste is chosen (S92). On the other handwhen accumulated (S93 is YES)after a decision result of S93 points to reproduction of commercials used as YES to the storage device 202 (S94) and the commercials are completed (S95 is YES)S92 is processed again. Commercials suitable for a user's taste are continuously outputted to the viewing-and-listening equipment 109 by the above processing. Processing mentioned above is repeatedly performed until an end of a virtual CM special channel is directed by user (until S96 is set to YES).
[0118]Nexta 3rd embodiment of this invention is described.
[0119]Drawing 23 is a block diagram of a 3rd embodiment of this inventionand comprises two or more user side equipment 300-1 - 300-nand the CM information distribution centre 400. The user side equipment 300-1 - 300-n and the CM information distribution centre 400 are connected via circuitssuch as the Internet.
[0120]The user side equipment 300-1 The transmission and reception means 301 and the tuner device 302The storage device 303the time address-mapping table 304and the history reporting means 305The taste agreement table 306the CM selecting means 307and the viewing-and-listening equipment 308It has the CM televising timing CM contents information acquisition means 309the contents correspondence table 310 of timingthe additional information acquisition means 311the additional information table 312the additional information related processing means 313and the user's operation part 314. It has composition with other same user side equipment.
[0121]The transmission and reception means 301 has the function to exchange data via circuitssuch as the Internet.
[0122]The tuner device 302 is a thing also corresponding to Internet broadcastingand is provided with the function considered as substitution of a channel by changing the directory between sites and in a sitea fileetc.
[0123]The storage device 303 and the time address-mapping table 304 have the same function as the storage device 102 and the time correspondence table 103 which were shown in drawing 1and composition.
[0124]A user has a function which transmits the viewing history which shows the TV program viewedlistened to which and recordedand a recording history to the CM information distribution centre 400 in every fixed time (for exampleone week) in the periodand the history reporting means 305. It has a function which receives the televising timing information of commercials suitable for the user's taste sent from the CM information distribution centre 400and is stored in taste agreement CM table 306.

[0125]The CM selecting means 307 has a function which substitutes the commercial part in the signal outputted to the viewing-and-listening equipment 308 by the commercials suitable for the user's taste accumulated in the storage device 303and a function which outputs the data from the additional information related processing means 313 to the viewing-and-listening equipment 308.
[0126]The CM televising timing CM contents information acquisition means 309The commercial televising timing information which shows the televising timing of each commercials broadcastthe commercial contents information which shows the contentsand the CM identification information for identifying commercials are acquiredand it has a function registered into the contents correspondence table 310 of timing.
[0127]The additional information acquisition means 311 acquires the additional information about commercialsand has a function stored in the additional information table 312. The CM identification information on the commercials relevant to [as additional information is shown in drawing 24] the additional informationThe data for additional information screens for displaying an additional information screenand request-for-information point informationincluding the E-mail address of the request-for-information pointa telephone numberetc.The data for merchandise purchase screens for displaying a merchandise purchase screen and the merchandise purchase point informationincluding an E-mail addressa telephone numberetc.that a user shows the transmission destination of merchandise purchase information which inputted using the merchandise purchase screen are included. From the broadcasting station etc. which have managed additional informationsuch additional information is superimposed on a broadcast wave by structure like the present teletextcan be sent to user side equipmentor can be sent to user side equipment using a telephone linecable TVetc.
[0128]The additional information related processing means 313 has a function which displays an additional information screen and a merchandise purchase screen on the viewing-and-listening equipment 308performs request for informationsuch as a catalogor transmits merchandise purchase information.
[0129]The CM information distribution centre 400 is provided with the transmission and reception means 401the user sorting means 402the classification table 403CM televising timing reporting means 404and the timing classification correspondence table 405.
[0130]The transmission and reception means 401 has a function which transmits and receives the user side equipment 300-1 - 300-n and data.
[0131]A classification numberand the genre and the favorite talent of the program to which the user belonging to the classification views and listens well are corresponded and registered into the classification table 403.
[0132]The user sorting means 402 has a function which acquires the classification number of the classification to which the user of user-side-equipment 300-i belongs based on the viewing history and recording history which have been sent (1 <=i<=n)and the contents of the classification table 403 from user-side-equipment 300-i.

[0133]A classification number and the televising timing information of two or more commercials expected to suit the taste of the user belonging to the classification are corresponded and registered into the timing classification correspondence table 405.
[0134]Based on the contents of the classification number of the user of user-side-equipment 300-i and the timing classification correspondence table 405 which the user sorting means 402 acquiredthe CM broadcasting timing reporting means 404The televising timing information of commercials suitable for the above-mentioned user's taste is acquiredand it has a function notified to user-side-equipment 300-i. The contents of the classification table 403 or the timing classification table 405It determines based on the viewing history sent via the Internet from the questionnaire result of a favorite programtalentand commercialsand each user side equipment 300-1 - 300-n which were performed to the user of each user side equipment 300-1 - 300-nand an operation history.
[0135]Nextoperation of this embodiment is explained.
[0136]When operation for reproducing the TV program accumulated in the storage device 308 when operation for the user of the user side equipment 300-1 to view and listen to the TV program currently broadcast is performed is performedThe same processing as a 1st embodiment shown in drawing 1 is performedand the commercials which do not suit a user's taste are substituted for the commercials suitable for a user's tasteand are outputted to the viewing-and-listening equipment 308. Howeveralthough one information about the commercials which suit a user's taste from the contents correspondence table of timing was retrieved in a 1st embodiment in S16 of S4 of drawing 5and drawing 6CM televising timing information about the commercials which suit a user's taste from taste agreement CM table 306 is searched with this embodiment one.
[0137]Nextoperation when a user performs various kinds of demands to the additional information related processing means 313 is explained.
[0138]As shown in drawing 25 (A)when commercials of a car are passeda user operates the user's operation part 314 and demands a display of an additional information screen from the additional information related processing means 313 to know additional information about the car.
[0139]If this demand is receivedthe additional information related processing means 313 will acquire CM identification information on commercials passed now (drawing 26S101). CM identification information is acquirable as followsfor example.
[0140]When it is a thing which commercials currently outputted to the viewing-and-listening equipment 308 are broadcastingThe time of a televising opening day when it is stored of the entries of the contents correspondence table 310 of timing targets the past entry rather than a present dateThe time of a televising opening day stored discovers an entry nearest to current timeand makes CM identification information stored in the entry CM identification information on commercials passed now. When commercials currently outputted to the viewing-and-listening equipment 308 are what is outputted from the storage device 303Televising time of commercials passed now based on the present reproduction

address of the storage device 303 and the contents of the time address-mapping table 304 is computedThe time of a televising opening day when it is stored of the entries of the contents correspondence table 310 of timing targets the past entry rather than televising time which computed [above-mentioned]The time of a televising opening day stored discovers an entry nearest to the above-mentioned televising timeand makes CM identification information stored in the entry CM identification information on commercials passed now.

[0141]If CM identification information is acquired by S101it will be made into a keythe additional information table 312 will be searchedand the additional information relevant to the commercials passed now will be looked for (S102). And when it is not able to discoverit is considered as the end of processingand S103 is processed when it is able to discover. When the commercials in which additional information is not accumulated are outputted to the viewing-and-listening equipment 308in order that a user may not demand the display of an additional information screenit may be made to display the seal which shows the existence of additional information at the time of the display of commercials.

[0142]At S103it is the CM selecting means 307. It directs to choose the output signal from the additional information related processing means 313 to inner selecting means 307 aand the data for additional information screens in the additional information discovered by S102 is outputted. The additional information screen which shows the telephone number of a dealer as shows drawing 25 (B)etc. by this to the viewing-and-listening equipment 308for example is displayed.

[0143]A merchandise purchase demand is inputted to purchase [when a user needs datasuch as a catalogafter an additional information screen is displayedinput a request-for-information demand from the user's operation part 314and] goods.

[0144]The additional information related processing means 313 will send E-mail which asks for KATAROKU etc. the request-for-information point shown using request-for-information point information in additional information via a circuitif a request-for-information demand is inputted (S104 is YES) (S105).

[0145]When a merchandise purchase demand is inputted (S106 is YES)the additional information related processing means 313 outputs data for merchandise purchase screens in additional information (S107). Therebya merchandise purchase screen as shown in drawing 25 (C) is displayed on the viewing-and-listening equipment 308. A user inputs necessary information for purchasing goodsif a merchandise purchase screen is displayedand the additional information related processing means 313 transmits inputted necessary information (merchandise purchase information) to the merchandise purchase point shown using merchandise purchase point information in additional information via a circuit (S108).

[0146]A user inputs termination indication from the user's operation part 314when terminating processing of the additional information related processing means 313. If termination indication is inputted (S109 is YES)the additional information related means 313 will return selecting means 307 a to the original state (state which chooses the output of the state or the storage device 303 which chooses the

output of the tuner device 302) (S110).
[0147]Nextoperation of the history reporting means 305 and the CM information distribution centre 400 is explained.
[0148]User-side-equipment 300-1 The inner history reporting means 305 sends the viewing history and recording history which show the TV program which the user viewedlistened to which and recordedand user ID to the CM information distribution centre 400 via a circuit at every fixed time (for exampleone week) in the period.
[0149]The user sorting means 402 in the CM information distribution centre 400Based on the viewing history and recording history which have been sent from the user side equipment 300-1and the contents of the classification table 403The classification number of the classification to which the user of the user side equipment 300-1 belongs is acquiredand the user ID of the acquired classification number and the user side equipment 300-1 is passed to CM televising timing reporting means 404. By this the CM broadcasting timing reporting means 404From the timing classification correspondence table 405CM televising timing information (televising timing information of the commercials expected to suit the taste of the user of the user side equipment 300-1) registered corresponding to the above-mentioned classification numberThe transmission and reception means 401 is used and it transmits to the user side equipment 300-1 shown by the above-mentioned user ID.
[0150]User-side-equipment 300-1 The inner history reporting means 305 stores it in taste agreement CM table 306if CM televising timing information is sent from the CM information distribution centre 400.
[0151]
[Effect of the Invention]As explained abovethe television signal store-and-forward-of-switching-signal equipment of this inventionSince the commercial part in the signal outputted to viewing-and-listening equipment is substituted for the commercials suitable for a user's tasteit is effective in becoming possible to view and listen to the commercials which used effectively the time when the user is viewing and listening to a TV programand suited taste. Since it can view and listen only to the commercials suitable for tasteviewing and listening of commercialssuch as commercials which have an adverse effect on a childnot to view and listen can be prevented.
[0152]The television signal store-and-forward-of-switching-signal equipment of this inventionWhen the electronic program guide screen is displayed on viewing-and-listening equipment at the time of starting of television signal store-and-forward-of-switching-signal equipmentwhen the reservation-of-picture-recording screen is displayed on viewing-and-listening equipmentthe picture recording program list screen is displayed on viewing-and-listening equipment and power off is directed by the userSince the commercials suitable for the user's taste are outputted also when viewing and listening of commercials is demanded by the userit is effective in an opportunity to view and listen to the commercials whose taste the user suited increasing.

[0153]The television signal store-and-forward-of-switching-signal equipment of this inventionThere are commercials and an effect that it can be made to view and listen to the commercials suitable for the user's taste when the program of the genre with a high tendency for commercials to be fast forwarded is reproducedsince it has the commercial reproduction genre information acquisition means which acquires the genre of the program displayed simultaneously.
[0154]The television signal store-and-forward-of-switching-signal equipment of this inventionSince it has the composition which searches for the televising timing information of the commercials whose taste of the user of user side equipment a commercial information distribution center suits based on the history notified from user side equipmentthere is an effect which can make composition of user side equipment easy.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1]It is a block diagram of a 1st embodiment of this invention.
[Drawing 2]It is a figure showing the example of contents of the time address-mapping table 103.
[Drawing 3]It is a figure showing the example of contents of the contents correspondence table 105 of timing.
[Drawing 4]It is a figure showing an example of a taste information setting screen.
[Drawing 5]It is a flow chart showing the example of processing of the CM selecting means 108 when viewing and listening to the program currently broadcast.
[Drawing 6]It is a flow chart showing the example of processing of the CM selecting means 108 when viewing and listening to the program accumulated.
[Drawing 7]It is a block diagram of a 2nd embodiment of this invention.
[Drawing 8]It is a figure showing the example of contents of the time address-mapping table 203.
[Drawing 9]It is a figure showing the example of contents of the mode table 214 of operation.
[Drawing 10]It is a figure showing an example of a genre setting screen.
[Drawing 11]It is a flow chart showing the example of processing of the CM selecting means 208 at the time of starting.
[Drawing 12]It is a flow chart showing the example of processing of the CM selecting means 208 at the time of CM reproduction genre mode ON.
[Drawing 13]It is a figure showing the display example at the time of CM reproduction genre mode ON.
[Drawing 14]It is a flow chart showing the example of processing of the CM selecting means 208 at the time of an EPG screen display.
[Drawing 15]It is a figure showing the display example at the time of the EPG screen mode ON.

[Drawing 16]It is a flow chart showing the example of processing of the CM selecting means 208 at the time of a reservation-of-picture-recording screen display.
[Drawing 17]It is a figure showing the display example at the time of reservation-of-picture-recording screen mode ON.
[Drawing 18]It is a flow chart showing the example of processing of the CM selecting means 208 at the time of a picture recording program list screen display.
[Drawing 19]It is a figure showing the display example at the time of picture recording program list screen mode ON.
[Drawing 20]It is a flow chart showing the example of processing of the CM selecting means 208 when power off is directed.
[Drawing 21]It is a figure for explaining a virtual CM special channel.
[Drawing 22]It is a flow chart showing the example of processing of the CM selecting means 208 when reproduction of a virtual CM special channel is required.
[Drawing 23]It is a block diagram of a 3rd embodiment of this invention.
[Drawing 24]It is a figure showing the example of contents of additional information.
[Drawing 25]It is a figure for explaining operation of the additional information related processing means 313.
[Drawing 26]It is a flow chart showing the example of processing of the additional information related processing means 313.
[Explanations of letters or numerals]
101 -- Tuner device
102 -- Storage device
103 -- Time address-mapping table
104 -- CM televising timing CM contents information acquisition means
105 -- The contents correspondence table of timing
106 -- User taste information acquisition means
107 -- Taste information table
108 -- CM selecting means
108 a -- Selecting means
109 -- Viewing-and-listening equipment
110 -- User's operation part
202 -- Storage device
203 -- Time address-mapping table
208 -- CM selecting means
208 a -- Selecting means
208 b -- Synthesizing means
211 -- CM reproduction genre information acquisition means
212 -- CM reproduction genre table
213 -- Operational mode setting-out means
214 -- Mode table of operation
300-1 - 300-n -- user side equipment
301 -- Transmission and reception means
302 -- Tuner device

303 -- Storage device
304 -- Time address-mapping table
305 -- History reporting means
306 -- Taste agreement CM table
307 -- CM selecting means
307 a -- Selecting means
308 -- Viewing-and-listening equipment
309 -- CM televising timing CM contents information acquisition means
310 -- The contents correspondence table of timing
311 -- Additional information acquisition means
312 -- Additional information table
313 -- Additional information related processing means
314 -- User's operation part
400 -- CM information distribution centre
401 -- Transmission and reception means
402 -- User sorting means
403 -- Classification table
404 -- CM televising timing reporting means
405 -- Timing classification correspondence table